

CLAIMS

What is claimed is:

1. In a computer system having a mass storage device that stores data in a plurality of data blocks and has access to a data storage location that contains a snapshot copy of the data, a method of backing up to the snapshot copy data blocks that have been designated to be backed up, wherein the method comprises the acts of:

identifying data blocks that have changed at the mass storage device during a specified time period;

designating data blocks from among the identified data blocks as being data blocks that are to be backed up, wherein other data blocks from among the identified data blocks are not to be backed up; and

transmitting a copy of the designated data blocks to the data storage location that contains the snapshot copy such that the transmitted copies of the data blocks can be included in the snapshot copy.

2. A method as recited in claim 1, wherein the act of identifying data blocks that have changed comprises the act of maintaining a table that includes an entry for at least the data blocks that have changed during the specified time period.

3. A method as recited in claim 1, wherein the act of designating data blocks comprises the act of maintaining a map of the data blocks of the mass storage device in which the designated data blocks are designated as being the data blocks that are to be backed up.

4. A method as recited in claim 1, wherein the act of designating data blocks is performed by identifying the other data blocks that are not to be backed up.

5. A method as recited in claim 1, further comprising the act of receiving, from a user, input identifying the data blocks that are to be backed up.

6. A method as recited in claim 1, further comprising the act of receiving, from a user, input identifying the data blocks that are not to be backed up.

7. A method as recited in claim 1, wherein the act of identifying data blocks that have changed is performed without interruption of user access to said mass storage device.

8. A method as recited in claim 1, wherein said data storage location that contains the snapshot copy is located remotely with respect to the mass storage device.

9. A method as recited in claim 1, wherein said data storage location that contains the snapshot copy is included in the mass storage device.

10. A method as recited in claim 1, wherein the act of transmitting a copy of the designated data blocks comprises transmitting only a copy of the designated data blocks that represent the most recent changes of the designated data blocks during the time period, such that any intermediate changes of the designated data blocks are not transmitted to the data storage location that contains the snapshot copy.

11. In a computer system having a mass storage device that stores data in a plurality of data blocks and has access to a data storage location that contains a snapshot copy of the data, a method of backing up to the snapshot copy data blocks that have been designated to be backed up, wherein the method comprises the acts of:

receiving user input identifying data blocks that are to be backed up;

at a first time, initiating the creation the snapshot copy of the data;

during a time period between the first time and a second time, tracking changes to the data blocks of the mass storage device so as to identify the data blocks that have changed;

at the second time, initiating an update of the snapshot copy by transmitting to the data storage location that contains the snapshot copy copies of only those data blocks that:

have been identified to be backed up; and

have changed during the time period, wherein the copies of the data blocks represent only a most recent change to the corresponding data blocks.

12. A method as recited in claim 11, wherein the act of tracking changes comprises the act of identifying the data blocks that have been changed during the time period in a data structure.

13. A method as recited in claim 12, wherein the act of identifying the data blocks that have been changed comprises the act of listing the data blocks that have been changed during the time period in a table.

14. A method as recited in claim 12, wherein the act of identifying the data blocks that have been changed comprises the act of identifying the data blocks in a map of the data blocks of the mass storage system.

15. A method as recited in claim 12, further comprising the act of designating, in the data structure, the data blocks that are to be backed up.

16. A method as recited in claim 12, further comprising the act of designating, in the data structure, the data blocks that are not to be backed up.

17. A method as recited in claim 11, wherein the second time is selected such that, after the update of the snapshot copy, the snapshot copy will include logically consistent data.

18. A computer program product for implementing, in a computer system having a mass storage device that stores data in a plurality of data blocks and has access to a data storage location that contains a snapshot copy of the data, a method of backing up to the snapshot copy data blocks that have been designated to be backed up, wherein the computer program product comprises:

a computer-readable medium carrying computer-executable instructions for implementing the method, wherein the computer-executable instructions, when executed by the computer system, cause the computer system to perform the acts of:

identifying data blocks that have changed at the mass storage device during a specified time period;

designating data blocks from among the identified data blocks as being data blocks that are to be backed up, wherein other data blocks from among the identified data blocks are not to be backed up; and

transmitting a copy of the designated data blocks to the data storage location that contains the snapshot copy such that the transmitted copies of the data blocks can be included in the snapshot copy.

19. A computer program product as recited in claim 18, wherein the act of identifying data blocks that have changed comprises the act of maintaining a table that includes an entry for at least the data blocks that have changed during the specified time period.

20. A computer program product as recited in claim 18, wherein the act of designating data blocks comprises the act of maintaining a map of the data blocks of the mass

storage device in which the designated data blocks are designated as being the data blocks that are to be backed up.

21. A computer program product as recited in claim 18, wherein the act of identifying data blocks that have changed is performed without interruption of user access to said mass storage device.

22. A computer program product as recited in claim 18, wherein said data storage location that contains the snapshot copy is located remotely with respect to the mass storage device.

23. A computer program product as recited in claim 18, wherein said data storage location that contains the snapshot copy is included in the mass storage device.